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ABSTRACT

The report summarizes results of a National Association of State Universities and Land Grant Colleges (NASULGC) member survey concerning the use and support of information technology on the campuses. An introductory section offers background information on the challenges facing NASULGC members in building an advanced infrastructure for information technology (IT), delivering high-quality education, reaching out to communities around the world, and developing more efficient administrative services. Major results of the survey presented and discussed include the following: IT is affecting nearly every area of campus, in education, research, and outreach; member institutions are making sizeable investments in IT; universities use a patchwork of funding sources to finance IT; and institutions are using IT to benefit people beyond the campus. A final section of the report lists details of IT initiatives at member campuses in 39 states, Guam, and the Virgin Islands. The survey questionnaire and a glossary are appended. (MSE)

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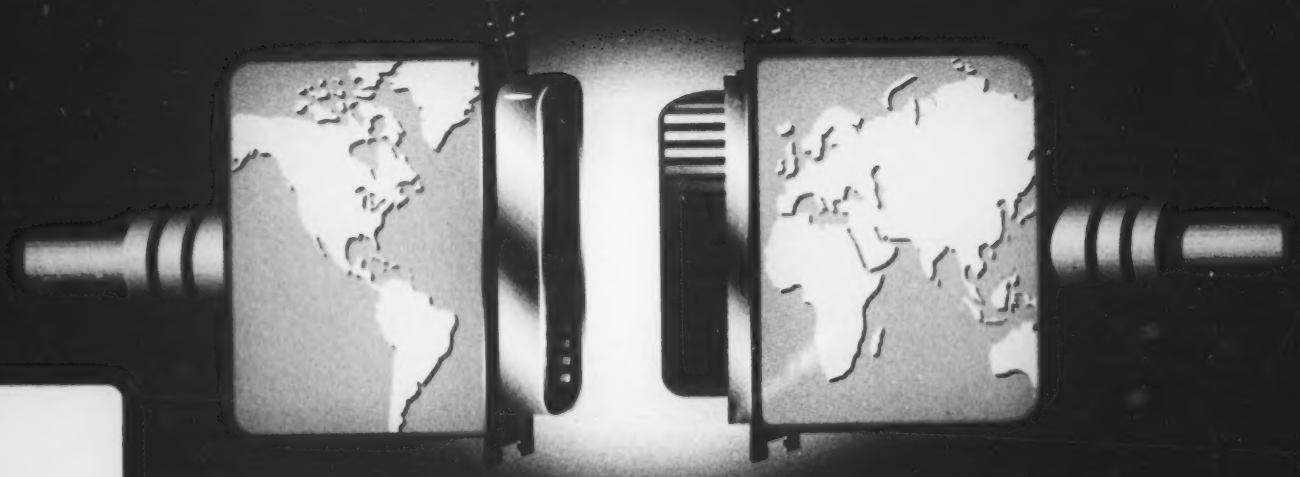

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NASULGC Universities Connecting With The Future

How do they do IT?

How do they pay for IT?

National Association of State Universities and Land-Grant Colleges
Office of Public Affairs and Commission on Information Technologies
May 1999

In November 1998, NASUGLC sent a survey questionnaire to its members requesting information on information-technology issues. The questionnaire was sent to several offices at each member university and a follow-up request for responses was sent in January. Nearly half of the institutions surveyed (48 percent), as well as several university systems, responded by the final February deadline. The statistical analysis was conducted on responses received from institutions by the deadline. Due to overlaps between some institutional and university-system responses, the statistical analysis of the data does not include responses from systems; nor does it include responses received from institutions after the deadline. However, the second part of the report, "Investments in Information Technology at NASULGC Institutions," includes details from all respondents. All the information in the second section was compiled by NASULGC staff based on the highlights of activities as reported by the institutions and system offices; it should not be considered a complete catalogue of the activities and investments undertaken by them.

We are grateful to all the campus professionals who took time to complete our survey and to representatives from several NASULGC Commissions and Councils who helped to develop this survey. A special acknowledgement goes to Cathy Henderson for conducting the statistical analysis.

For additional copies of this report, please send e-mail requests to pubs@nasulgc.org
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Setting the Stage

From the laptop to the gigaPoP, colleges and universities are pouring significant resources into a wide array of advances in information technology needed to fulfill their multiple missions of teaching, research and public service in the Information Age. Investments in basic information technology, equipment and services have been under way for several years, and many NASULGC universities already have highly sophisticated capabilities. This report reveals that they now are broadening their focus to use technology to enhance "connectivity" with students, researchers and communities on-campus and around the globe.

Investing in the Future

Building an Advanced Infrastructure: Universities are connecting classrooms and campus buildings with high performance networks and investing in high-speed Internet connections that can support nearly instantaneous communication of complex research data. To ensure access, they are updating and increasing the number of student computer labs and faculty computers available.

Delivering High Quality Education: Institutions also are investing significant resources in applying the new technology in educational settings. They are financing training and salaries for computer-support personnel, faculty training in the use of various technologies, electronic course-development software, "smart classrooms" equipped with state-of-the-art multimedia capabilities and Internet connections, and expanded curricula to ensure technologically savvy graduates.

Reaching out to communities around the world: Universities are also investing in video-conferencing capabilities and other advanced technologies to provide live, interactive distance-education classes and in developing coursework and outreach programs to reach global, non-traditional and underserved communities.

Developing More Efficient Administrative Services: Finally, institutions are purchasing software and hardware to allow paperless administrative transactions

and record keeping. Y2K compliance efforts are under way to assure greater efficiency and productivity into the next century.

In light of the rich diversity among NASULGC institutions, it is not surprising to discover that these institutions are using technologies in many innovative and varied ways to carry out their multiple missions. A glance at the state-of-the-art technology already employed on individual NASULGC campuses (see "Highlights" beginning page 15) reveals the substantial institutional investments and advances already in progress.

The summaries of institutions' activities also underscore the vast array of investments necessary for a university to be fully operational in this arena. As a result, universities are creating new kinds of financial partnerships with federal, state, local and private entities to support cutting-edge developments. As we move into the next century, our institutions will continue to develop new connections, programs and partnerships to spearhead technological advancements and attempt to bring all Americans into the Information Age.

Identifying Institutional Priorities and Funding Sources

The ever-increasing technological needs, coupled with the tremendous expense and brief shelf-life of rapidly emerging technologies, challenge university administrators to make difficult choices about funding priorities and to creatively seek out new sources of financing. In an effort to illustrate the many investments by our institutions and to anticipate future trends in information-technology investments, the recent NASULGC survey asked members to identify specific institutional initiatives, priorities and sources of funding. *Connecting with the Future* includes both an analysis of the survey results and a summary of each institution's information-technology initiatives. It is hoped these findings will be a useful resource for higher education administrators and planners as they anticipate future investments.

Survey Results

Major Findings

- Information technology is affecting nearly every area of campus, providing new tools for education, research, and outreach.

- NASULGC universities have made, and continue to make, sizeable investments in information technology. On average, approximately 5 percent of operating budgets are being allocated for information-technology expenditures.

- Universities use a patchwork of funding sources, including student fees, to finance information technology. By assessing fees, 71 percent ask their students to share in the burden of financing information technology.

- Universities are using IT to benefit people beyond the confines of their campuses. Two-thirds of respondents are participating in a "virtual university" or are a partner in an IT-supported distance-education project that benefits non-traditional students. Forty-four percent of all respondents cited affiliations with a specific virtual university. Cutting-edge research employing technology is further benefiting millions of Americans.

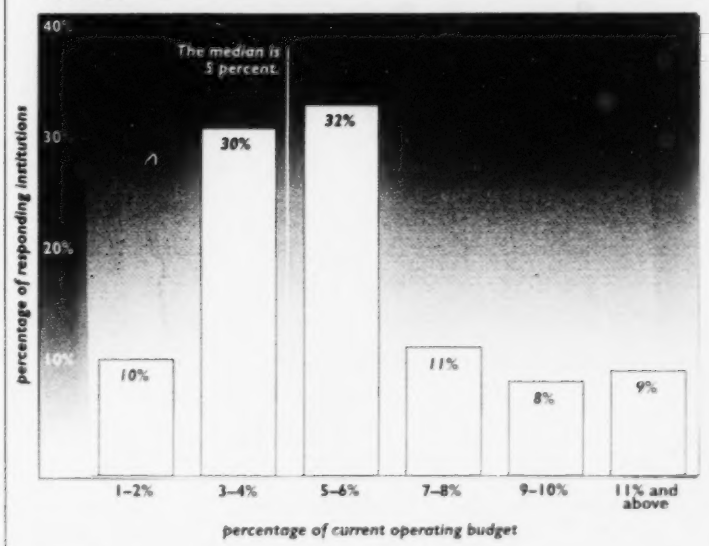
Discussion of Findings

The growth and application of information technology have revolutionized both the day-to-day operations and the delivery of education at colleges and universities. At many universities, prospective students are downloading their admission applications on-line. Enrolled students register for classes electronically. Faculty and students use e-mail to extend discussions beyond the classroom walls, and to access digitized libraries and resource materials from their laptops. Researchers collaborate with others in distant parts of the country and the world. Distance-education courses are being offered to K–12 classes, to professionals at work, to adults at home, and to individuals at community gathering places such as libraries or recreation centers.

NASULGC universities have made, and continue to make, sizeable investments in information technology

To excel at their missions of teaching, research and service, public and land-grant universities already have made massive investments in information technology. In most cases, universities have a basic information-technology infrastructure in place, and they now are focusing their efforts on expanding access, on upgrading their technology in line with the rapid pace of IT advances, and on integrating technology into the delivery of education.

FIGURE 1. Percentage of Current Operating Budget Allocated for Information Technology Expenditures at NASULGC Institutions: 1998–99



Note: It is assumed that these figures reflect FY 98 or FY 99 expeditures.
Source: National Association of State Universities and Land-Grant Colleges, Information Technology Survey, 1998–99.

All responding institutions said they are investing in information technology. On average, universities report that 5 percent of their operating budgets are currently allocated to these expenditures. (See Figure 1) Although all respondents are investing in IT, there is a wide variation in the reported percentage of operating budgets dedicated to information technology, with responses ranging from

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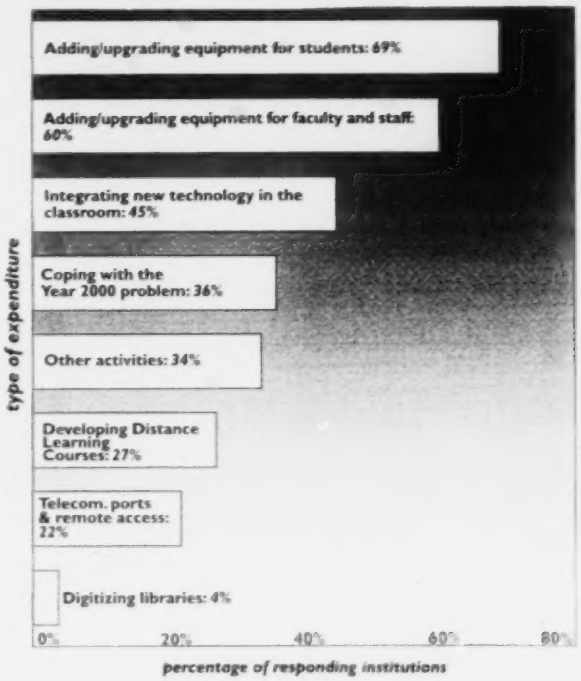
1 percent to 25 percent. Many universities were able to calculate this figure precisely, while others gave rough estimates. Some institutions indicated that they were uncertain about the range of expenditures to include under the rubric of "information technology."

FIGURE 2. Most Common Information Technology Expenditures at NASULGC Institutions: 1998–99



Note: It is assumed that these figures reflect FY 98 or FY 99 expenditures.
Source: National Association of State Universities and Land-Grant Colleges, Information Technology Survey, 1998–99.

When asked to indicate their top three priorities for IT spending, 69 percent of respondents listed adding and upgrading computer equipment for their students as a top priority and 60 percent cited adding and upgrading equipment for faculty and staff. (See Figure 2) Integrating new technology in the classroom followed (cited by 45 percent of respondents). Institutions also are giving priority to coping with the Year 2000 problem (36 percent) and developing distance-learning courses (27 percent). Fewer institutions said they are focusing on providing telecommunications ports and remote access (22 percent) and on digitizing their libraries (4 percent). Other types of expenditures reported by institutions included expanding Web-based services and providing salaries and training materials for staff.

Universities use a patchwork of funding sources, including student fees, to finance information technology

Given the enormous cost of technological improvements, universities that are leaders in information technology have succeeded in fashioning a patchwork of funding sources. Although universities report that their IT initiatives are financed most often through existing operating budgets, they also tap a variety of other

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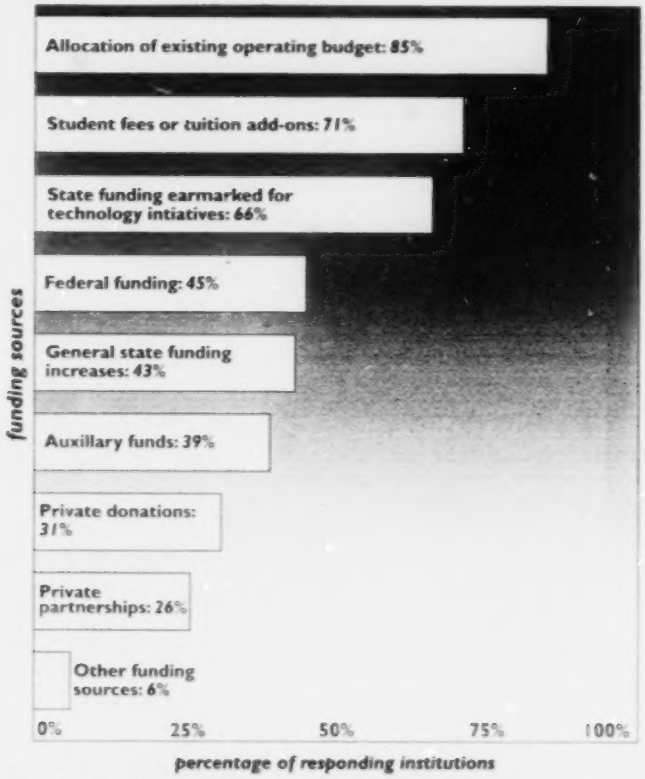
FIGURE 3. Sources of Funding for Information Technology Initiatives at NASULGC Institutions: 1998–99



Note: It is assumed that these figures reflect FY 98 or FY 99 data.
Source: National Association of State Universities and Land-Grant Colleges, Information Technology Survey, 1998–99.

resources. Universities submit budget requests to their state governments for funds to invest in technology, apply for grants and program funds from a variety of federal agencies, and approach private businesses and individuals for contributions and grants. In many cases, funds or donations of equipment are dedicated to a specific project, program or college within the university—providing the additional challenge of locating funding that fits with institutional IT priorities, such as providing uniform upgrades or advanced infrastructure across campus.

Nearly all respondents reported financing information technology through multiple sources of funds. Most universities (85 percent) directed a portion of their operating budget to information technology. Most also obtained money from outside sources or student fees. Outside sources of funds are particularly likely to be earmarked for specific projects. Student fees are typically used to benefit the population financing the improvements. Specific sources of IT funds cited (see Figures 4 and 5):

Allocation of existing operating budget (85 percent)
Expenditures included general expenses for routine computer equipment and maintenance, telecommunications ports/remote access, access to library resources, student computer labs, installation of infrastructure for fiber optics and Asynchronous Transfer Mode (ATM) networks, Y2K compliance efforts, and improved software for student and faculty use.

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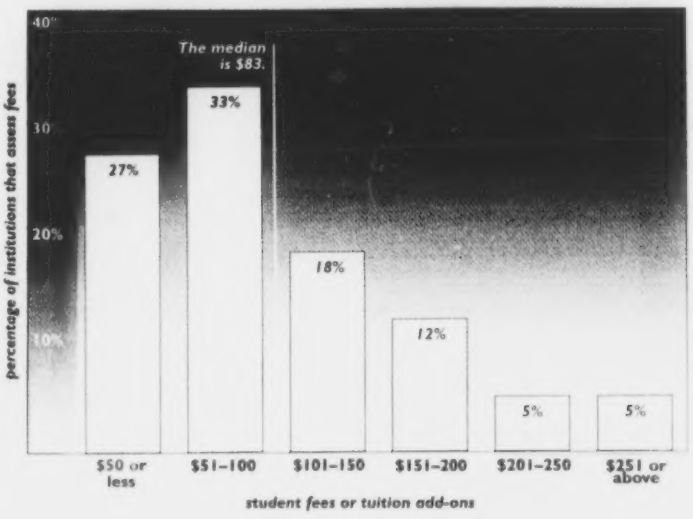
Student fees/tuition add-ons (71 percent)

These fees were typically used to finance improvements that directly benefit students, including spending for student computer labs, other computer support, and Internet access. Some of these fees are linked to the number of credit hours taken by each student, while other institutions simply charge a per-semester or annual fee for technology. Among the schools that assess fees the average amount generated annually was $83 per student, and the fees assessed ranged widely, from $2 to $420 per year. A small number of universities require or are considering requiring incoming students to provide their own computer equipment or to otherwise ensure that they have access to a computer.

FIGURE 4. NASULGC Institutions Reporting Information Technology Funded from Annual Student Fees or Tuition Add-ons: 1998–99



Note: It is assumed that these figures reflect FY 98 or FY 99 data.
Source: National Association of State Universities and Land-Grant Colleges, Information Technology Survey, 1998–99.

State funds earmarked for technology initiatives (66 percent)

The most common earmarks were for classroom technology, training of faculty to use technology, Y2K programs, distance learning, and library-technology enhancements.

Federal funds (45 percent)

NASULGC institutions received funds from a wide array of federal programs, including support from the National Science Foundation, Department of Education (primarily for Developing Institutions under Title III of the Higher Education Act), Department of Defense, National Institutes of Health, National Aeronautics and Space Administration, Department of Commerce, and Department of Agriculture. Projects included the devel-

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opment of high-speed regional digital networks, basic and applied research in information technology, distance-learning courses for rural communities, equipment for public-service projects and general infrastructure initiatives.

General increases in state funds (43 percent)
These monies were directed toward purchasing training materials, equipment renewal and replacement, networking workstations, and general infrastructure development.

Auxiliary funds (39 percent)
Some funds were being spent to wire residence halls, while other monies were used for general information technology upgrades and student labs.

Private donations (31 percent)
Examples of projects supported by these funds include general expansion of instructional and research technology, Internet2 programs, and upgraded equipment for student computer labs.

Private partnerships (26 percent)
The most frequently cited corporate partners supporting campus initiatives were Xerox, Cisco Systems, Bell Atlantic, IBM and the Northrop Grumman Corporation. Some of the projects provided money for specific academic departments (such as electrical engineering), while other funds underwrote the development of "smart" classrooms, executive teleconferencing facilities, and multimedia theaters.

Other sources (6 percent)
Funds from other sources were used to enhance student computer equipment, faculty-support centers, and public-service outreach programs.

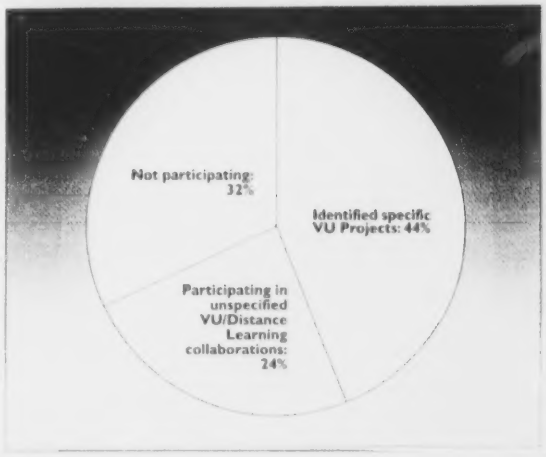
Universities are using IT to benefit people beyond their campuses

Restructuring the delivery of education: Information technology has spurred enormous changes in the delivery of education on campus, but nowhere are the changes more profound than in the realm of cyber education. With the advent of the Internet, traditional distance education and extension courses have become more flexible and accessible. Advances in telecommunications have allowed interactive video-conferencing of instructor-led classes. Support services

such as electronic access to libraries, registration, educational records, advising and career services are also available to the non-residential student at the touch of a button.

Further, individual universities have sought out collaborative mechanisms that allow them to offer even more educational options on-line. Universities have forged partnerships to offer greater flexibility and access to their own students on-line, have reached out to K–12 schools with college preparatory and other educational programming, and have worked with businesses to provide educational opportunities and retraining for their adult workers.

FIGURE 5. NASULGC Universities Involved in Virtual University (VU)/ Distance Learning Projects: 1998–99


Not participating: 32%
Identified specific VU Projects: 44%
Participating in unspecified VU/Distance Learning collaborations: 24%

Note: It is assumed that these figures reflect FY 98 or FY 99 data.
Source: NASULGC, Information Technology Survey, 1998–99.

Some partnerships have given rise to a new class of institution—the "virtual university." These universities—made up of individual colleges, universities and other entities—collaborate by pooling their distance-education offerings. They range in organization from accredited, degree-granting entities with multiple members that deliver courses electronically, to those that serve as on-line gateways and repositories of information about the distance-education courses offered by their member institutions.

Two-thirds of NASULGC institutions report collaborating with business/industry, government/communities, other higher education institutions, or other organizations on a "virtual university" (See Figure 5) or an IT-supported distance-learning project. Forty-four percent of all respondents cited affiliations with specific virtual university projects.

Of the 44 percent of universities that named a specific virtual university project, the most frequently cited were the Western Governors University and the Southern Regional Education Board/Electronic Campus. Several respondents also mentioned state or system-wide virtual university projects.

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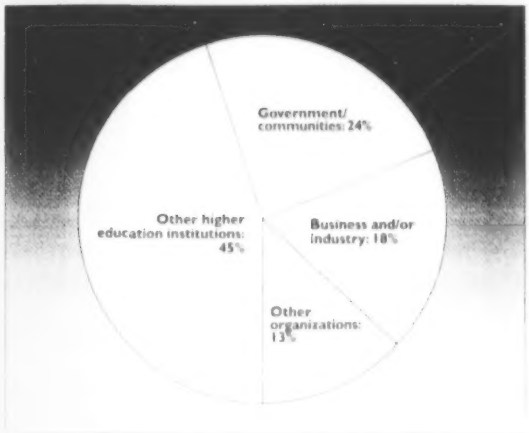
FIGURE 6. Collaboration by Type of Partner on Virtual University Projects at NASULGC Institutions: 1998–99



Note: It is assumed that these figures reflect FY 98 or FY 99 data.
Source: NASULGC, Information Technology Survey, 1998–99.

The remaining institutions responding affirmatively to the survey question about whether they were involved in any "virtual university project" appear to have included, under the rubric of "virtual university," a variety of collaborations that were formed to provide distance education to non-traditional students. Some of these included outreach programs to K–12 schools, partnerships with business or industry to provide distance training, and other interactive course offerings.

Of the virtual university/distance-education collaborations that two-thirds of responding universities have undertaken, 45 percent are partnerships with other higher education institutions, 24 percent involve partnerships with government or communities and 18 percent are with business and/or industry partners.

Producing Cutting-Edge Research: University collaborations are not limited to educational programs. Through collaborations with the private sector and the federal government, universities are also applying the talents of world-renowned researchers to some basic problems and questions in computer science and information technology. They are also using innovations stemming from applied research to develop new networks, applications, software and hardware. Other research projects incorporating information technology are leading to important breakthroughs that affect business, defense, health care, and other sectors in ways that benefit millions of Americans.

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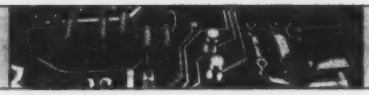


Are States Placing Any Limitations on the Use of Information Technology?

Given the prevalence and reach of information technology, and state governments' role in the oversight of public and land-grant universities, NASULGC asked its members if their state legislatures had considered or passed any proposals that inhibited their expansion of information technology. Only 11 percent of respondents registered any concerns about enacted or pending legislation. Of those, some had been exempted from restrictive provisions of legislation or said it was unclear whether laws currently being implemented would have a negative effect on their use of information technology.

A few institutions said that state efforts to implement a single, statewide IT plan or requirements that higher education use a statewide digital network have caused concern because of each institution's highly individual needs. Some respondents expressed concern that state networks could not support the high-performance needs of universities, and that a central plan would not allow institutions to innovate, to adapt rapidly to new technologies, and to adequately meet new research needs or student and faculty demands.

In addition, a few respondents said that their state legislatures would not permit them to charge students technology fees, denying administrators the ability to adequately fund IT; that they encounter excessive red-tape in getting the state approval required for their computer-related purchases; and that filtering devices to prohibit access to "sexually explicit materials" on-line have been proposed. Some said open-records laws, either in general or where specifically applied to digital data, continue to be a concern.

Survey Questionnaire

NASULGC Information Technology Survey – Funding and State Issues

1. What percentage of your institution's current operating budget is allocated for information technology expenditures? Please give your best estimate:

2. Where are those efforts concentrated? Indicate your institution's top three priorities:

   __ Adding/upgrading computer equipment for students
   __ Adding/upgrading computer equipment for faculty and staff
   __ Telecommunications ports and remote access
   __ Digitizing libraries
   __ Coping with Year 2000 problem
   __ Developing Distance Learning courses
   __ Integrating new technology in the classroom
   __ Other_____

3. How are your information technology initiatives funded? (Put an X in the left-hand column for all that apply.) If a funding source is earmarked to a specific project (e.g. student fees are used to add student computer equipment), please indicate in the right-hand column:

   Example: For example if you receive $10.00 per student in student fees and these fees go directly to add student computer equipment, your first response would look like this:

X	*Student Fees or tuition add-ons. How much are those fees? $10.00 per student*	*Student computer equipment*

	Funding Sources	Earmarked to
	Student Fees or tuition add-ons. How much are those fees? _____ per student	
	State funding ear-marked for technology initiatives	
	General state funding increases	
	Federal funding. Agency or program?	
	Allocation or reallocation of existing operating budget	
	Auxiliary funds	
	Private partnerships	
	Private donations	
	Other, please describe	

4. Please describe any proposals your state legislature has proposed in the past five years that have inhibited your ability to expand information technology development or access to information—such as filtering devices on web sites, open records initiatives etc.—and indicate if the proposal has been enacted. (Attach description if available.)

5. Please describe technological innovations or initiatives undertaken by your institution of which you are most proud – especially those that are state-funded or will benefit your state. (Attach description if available.)

6. Is your institution involved in any virtual university project? If so, are you collaborating with any of the following?
   - __ Business and/or Industry
   - __ Government/Communities
   - __ Other higher education institutions
   - __ Other organizations

Please describe this project:

7. Is there any other information you would like to share that would be of interest to our members?

Investments in Information Technology at NASULGC Institutions

The information in this section was compiled based on the highlights of activities as reported by the institutions and system offices in response to the NASUGLC information technology survey. This listing is illustrative of the wide breadth of IT undertakings at NASULGC universities but should not be considered a complete catalogue of the activities and investments under way. A glossary defining technical terms begins on Page 39.

Alabama

Alabama A&M University

- Gives priority to adding/upgrading computer equipment for students, faculty and staff.
- Assesses fee of $50 per student to finance adding/upgrading computer equipment and other student-oriented improvements in information technology.
- Receives funds under Title III of the Higher Education Act to upgrade faculty equipment.
- Is developing a statewide database for student records.
- Participates in the 1890 Southern Food Systems Education Consortium fostering development of multimedia Internet distance education courses.

University of Alabama

- Gives priority to Y2K compliance, adding/upgrading computer equipment for students, and upgrading network infrastructure.
- Assesses student fee of $50 per semester to finance upgrades and maintenance of student computing labs.
- Receives NSF and EPSCoR funds for development of a high-speed regional computer network.
- Participates in Internet2, providing a high-speed regional connection as well as a state-wide network. The state contributes $300,000 per year to this project.
- Collaborated with the University of Alabama at Birmingham in a joint bid for equipment that resulted in savings of $1.3-million.
- Is collaborating with the University of Alabama at Birmingham and the University of Alabama in Huntsville to establish a regional gigaPoP to provide high performance networking to the state's research institutions, and with the Alabama Research and Education Network (AREN) to provide supercomputer processing and a statewide network connecting all higher education institutions and many high schools in Alabama.

University of Alabama at Birmingham

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and upgrading network infrastructure.
- Assesses student fees of $4 to $9 per credit hour that are earmarked for each school for learning resources.
- Receives NSF funding through "Connections to the Internet" Program and NSF and Alabama EPSCoR funding.
- Through private partnerships with ITC DeltaCom, Ascend Communications Inc., 3COM

Corporation, StarBurst Corporation and Torrent Technologies is receiving network communications equipment, a multicast file transfer software package, two OC3 connections and support for ATM port charges.

Participates in Internet2.

Participates in Network of Alabama Academic Libraries. http://www.ache.state.al.us/Naal.htm

Assists the Alabama Supercomputer Authority in providing network computing to local school districts.

Is collaborating with the University of Alabama and the University of Alabama in Huntsville to establish a regional gigaPoP providing high performance networking to the state's research institutions, and with the Alabama Research and Education Network (AREN) to provide supercomputer processing and a statewide network connecting all higher education institutions and many high schools in Alabama.

Collaborates with numerous universities in the health sciences, including efforts to make high field (4.1 Tesla) whole body magnetic resonance imaging available throughout the U.S., via networks from remote locations. Also collaborating in testing and/or developing standards for the transfer of diagnostic-quality multimedia data over digital networks.

University of Alabama in Huntsville

Gives priority to adding/upgrading computer equipment for students, faculty and staff and conducting upgrade of administrative (human resources, financial, etc.) computing services.

Assesses fee of $3.50 per student credit hour to finance equipment for student computer labs and operating expenditures.

Participates in Internet2.

Is collaborating with the University of Alabama at Birmingham and the University of Alabama to establish a regional gigaPoP providing high performance networking to the state's research institutions, and with the Alabama Research and Education Network (AREN) to provide supercomputer processing and a statewide network connecting all higher education institutions and many high schools in Alabama.

Alaska

University of Alaska Fairbanks

Gives priority to adding/upgrading computer equipment for students, developing distance learning courses and integrating new technology in the classroom.

Assesses student fees of $5 per credit up to a maximum of $120 to finance instructional technology and student computer labs.

Receives Federal DOD funds for the Arctic Regions Supercomputer.

Has formed private partnerships to finance instructional technology, computing equipment for computer science and for electrical engineering.

Outfitted "smart classrooms."

Provides Internet access for each residence hall room.

Participates in the Western Governors University.

Arizona

Arizona State University

Gives priority to developing distance learning courses, adding telecommunications ports and remote access capabilities and adding/upgrading computer equipment for students, faculty and staff.

Is developing a new electronic student information system.

Is conducting Y2K compliance measures.

Has automated its graduate admission process.

Is developing distance learning courses, including an extensive effort by the College of Extended Education to address the different learning styles of its students in a virtual university setting.

Northern Arizona University

- Gives priority to Y2K compliance, adding/upgrading computer equipment for students and developing distance learning courses.
- Receives state funds earmarked for enhancement of library technology and software and for distance learning, specifically Interactive Instructional Television programs and participation in Western Governors University.
- Receives federal funds earmarked for distance learning efforts with rural communities, instructional television program support and network development.
- Is financing faculty development, new instructional technology, telecommunications ports and equipment for students.
- Is developing and using locally financed web-enhanced and web-based courses.

Arkansas

University of Arkansas, Fayetteville

- Gives priority to adding/upgrading computer equipment for students, faculty and staff and adding telecommunications ports and remote access capabilities.
- Assesses technology fee of $2 per credit hour to finance student labs and dial access equipment.
- Is partnering with other University of Arkansas institutions to develop a virtual university system.
- Provides leadership, services and training for Internet development for the Arkansas public sector.
- Developed an award-winning comprehensive data warehouse for administrative and academic databases.
- Developed World Wide Web interfaces to enable information access on-campus as well as from remote locations.

California

California Polytechnic State University, San Luis Obispo

- Gives priority to adding/upgrading computer equipment for faculty, staff and students and integrating new technology in the classroom.
- Used increases in general state funds for a program to replace faculty computers every three to four years and to provide training (http://fwp.calpoly.edu/information/faq/), conduct a data warehousing project and upgrade the mainframe and central UNIX server.
- Receives state funds ear-marked for improving baseline access, training and support for students, faculty and staff (http://www.calpoly.edu/~its/bats/) upgrading the telecommunications infrastructure and implementing new administrative systems based on client/server architecture.
- Instituted MustangInfo, a secure WEB server application allowing students to view their academic information on-line. http://miserve.its.calpoly.edu/prod.html
- Built a Student-Centered Electronic Teaching Library Classroom for instruction combining library print and audio-visual materials, online resources and computer applications. http://www.lib.calpoly.edu:80/info/setclassroom/index.html
- Increased number and use of multimedia classrooms/studio labs. Examples: http://www.calpoly.edu:80/~mscholef/studiochem.html and http://synner.ceng.calpoly.edu:80/CPP/cpp126.html
- Conducts Information Competence (http:/www.lib.calpoly.edu/infocomp/index_calpoly.html) and Computer-Based Training (www. calpoly.edu/~its/cbtweb) projects.
- Delivers graduate program in aeronautical engineering via distance education to military personnel at Vandenberg Air Force Base.

California State University, Sacramento

- Gives priority to adding/upgrading computer equipment for students, faculty and staff and developing distance learning courses.
- Receives state funds earmarked for increasing baseline access, training and support for students and faculty, including 24-hour access to equipment and network resources. http://www.csus.edu/acaf/24-bats.htm
- Uses increases in state funds and existing operating budget to finance infrastructure development, networking of workstations and training materials.
- Participated in developing the California State University (system-wide) Integrated Technology Strategy (http://its.calstate.edu/) and Technology Infrastructure Initiative (http://www.calstate.edu/tii/toc.html).
- Participates in the Sacramento Educational Cable Consortium.

San Diego State University

- Gives priority to improving administrative and student information systems, adding/upgrading computer equipment for students, faculty and staff, and for training and support services (financed through state funds and existing operating budget).
- Installed ATM infrastructure.

San Francisco State University

- Gives priority to integrating new technology in the classroom, adding/upgrading computer equipment for faculty and staff, and developing distance learning courses.
- Built a 24-hour student computing lab and study area.
- Financed improvements in faculty workstations and "smart classrooms."
- Partnered with Sun Microsystems to renovate a student computing lab and equip it with Java stations and a Sun server.
- Partnered with NEC Business Systems West to develop campus multimedia facilities, including a state-of-the-art executive teleconferencing facility, a multimedia classroom and a renovated theater for multimedia presentations.
- Installed a dedicated modem pool for faculty and a 56 Kbps modem pool for students using Ascend products.
- Designed and implemented Web applications to facilitate 24-hour access to information for students, faculty and staff. Online applications include Faculty Class Roster, Student Schedule, Student Financial Statement, Employee Leave Statement, and Password Change.

University of California, Davis

- Gives priority to adding telecommunications ports, remote access capabilities and LAN deployment, adding/upgrading computer equipment for faculty and staff and providing mobile e-mail access.
- Participates in CalREN– the statewide high-speed (Internet2) higher education network, and DANR Connect, connecting 57 county offices to the UC network.

University of California, Irvine

- Gives priority to adding technical support staff, adding/upgrading computer equipment for faculty and staff and improving its internal network.

University of California, Santa Cruz

- Gives priority to improving basic network-access infrastructure, integrating new technology in the classroom and developing curriculum and acquiring tools, databases and support for faculty.
- Receives state funds earmarked for instructional technology initiatives.
- Participates in CALREN, the statewide high-speed (Internet2) higher education network.
- Provides more than 350 computer labs housing more than 11,000 workstations for student use, and more than 110,000 network

connections, which exceeds the number of phone connections on campus.

- Is approaching 100% Internet connectivity in residence hall rooms under its ResNet Program.
- Has provided Internet connections in more than half of campus classrooms.
- Participates in the UC College Prep. Initiative to reach high school students in a virtual setting.
- Equipped high-tech teaching facilities to provide interactive distance education to students at remote locations. http://www.ucsc.edu/currents/97-98/05-11/videoconference.htm

Colorado

Colorado State University

- Gives priority to adding/upgrading computer equipment for students, faculty and staff and to maintaining/enhancing information technology infrastructure.
- Assesses fees of $50 to $262 per year per student to finance technology for students.
- Has used general state funding increases to improve information technology infrastructure, upgrade classrooms and replace equipment.
- Participates in Internet2, and is in the process of deploying high-speed networks on campus. http://www.colostate.edu/Services/acns/csuiite/index.html
- Received a grant from the NSF under the High Performance Connections program. http://www.colostate.edu/services/acns/hpc/
- Doubled the central modem pool to yield a contention ratio (the ratio of number of users to number of modems) of 15:1. http://www.colostate.edu/Services/acns/
- Is implementing a digital library.
- Participates in the Western Governors University.
- Is working with other Colorado colleges and universities to:
  - Implement an Internet2 GigaPoP; a statewide meeting point for high-speed networking, and
  - Explore video over IP, the transmission of compressed, digital video over IP networks.

University of Colorado (System Response)

- Gives priority to financing information technology applications for administrative streamlining, integrating new technology in the classroom, developing distance learning courses and digitizing libraries.
- Offers CU-Online (www.cuonline.edu), the CU virtual university, with 120 fully online courses per year and 2500 enrollments this year.
- Works to control the cost of acquisition and deployment of technology.

University of Colorado at Boulder

- Gives priority to adding/upgrading computer equipment for students, faculty and staff and integrating new technology in the classroom.
- Assesses fee of $60 per student per semester to finance student computer labs and remote access.
- Participates in the Western Governors University.
- Conducts an academic initiative, the Campus-wide Alliance for Technology, Learning and Society (www.colorado.edu/ATLAS), focusing on improving infrastructure, outreach to K–12 schools, new multidisciplinary technology, arts and media coursework, and improvement and assessment of technology in education.

Connecticut

Connecticut Agricultural Experiment Station

- Gives priority to Y2K compliance, adding/upgrading computer equipment for faculty and staff, and adding telecommunications ports and remote access capabilities.
- Receives state funding earmarked for computer upgrades for staff and scientists and Y2K compliance.
- Installed new digital telephone system and local area network with fiber backbone.

Delaware

University of Delaware

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and integrating new technology in the classroom.
- Is partnering with state and corporate community to strengthen information-systems curriculum.
- Assists schools, public service organizations, and local government agencies in developing and using services on the Internet through Network Partnership Program. http://www.udel.edu/netpartners/
- Provides Digital Resources to Schools through UD Library/State Education Partnership.
- Developed Grants Management System using Web technologies and database integration, allowing creation, approval and submission of grants through paperless process. http://www.udel.edu/OVPR/GMS/gms.html
- Is planning implementation of state-wide Videoconference Network to all hospitals in Delaware.
- Participates in the SREB, a consortium of institutions that offer courses through the Southern Regional Electronic Campus.
- Participates in the American Distance Education Consortium (ADEC), an international consortium of state universities and land-grant institutions providing distance education programs and services via information technologies. http://www.adec.edu/
- Is a member of the National Technological University (NTU), a cooperative effort by 50 major universities to provide graduate and continuing education for engineers, technical professionals and managers via satellite telecommunication and compressed digital video (CDV). http://www.ntu.edu/overview.htm

Florida

Florida A&M University

- Gives priority to adding telecommunications ports and remote access capabilities and adding/upgrading computer equipment for students, faculty and staff.
- Assesses student fees to finance technology infrastructure and student access.
- Provides distance learning opportunities.
- Participates in the Florida Virtual University.
- Involved in Next Generation Internet high-speed networking program.
- Provides a statewide comprehensive advising system.

Florida Atlantic University

- Gives priority to adding/upgrading computer equipment for faculty, staff and students and developing distance learning courses.
- Assesses student fees of $64.31 per full-time-equivalent student to finance student labs and improve network services.
- Rewired several buildings to support voice/video/data communication and added Cisco 5500 Switches to allow for a switched data environment rather than a shared data environment.
- Obtained a new Web server designed specifically for on-line academic courses
- Plans to open a 24-hour computer lab, replace older-model computers on all campuses and replace or upgrade all telecommunication switches to accommodate new technologies.
- Planning creation of a virtual university.

Florida International University

- Gives priority to digitizing libraries, developing distance learning courses and integrating new technology in the classroom.
- Built an ATM-based network for local and wide-area use.
- Participates in Internet2.
- Is the recipient of an NSF grant for high-speed connectivity.
- Partners with IBM and other organizations using IBM Digital Library to provide access to special collections, etc., with voice, video and data over the university's ATM infrastructure.

Florida State University

- Gives priority to Y2K compliance, integrating new technology in the classroom and developing distance learning courses.
- Receives state funds earmarked for student computing support and state matching funds for the National High Magnetic Field Laboratory.
- Receives NSF and Department of Energy research funds for computing.
- Participates in Florida Net, a new high-speed network for education users in the state.
- Participates in Internet2.
- Participates in the Florida Academic Career Tracking System (FACTS), a statewide advising system for students in state universities and community colleges that allows "degree shopping" comparisons of degrees offered at different universities and the requirements needed for graduation.
- Collaborates with the SREB.
- Collaborates with the Florida Virtual Universities to offer distance learning courses.

University of Central Florida

- Gives priority to adding/upgrading computer equipment for students, faculty and staff and developing distance learning courses.
- Assesses student fees averaging $51 per student to finance student computing and communications equipment and services.
- Implemented an advanced campus network that serves as a platform for access to a broad range of communication, information, and administrative services.
- Participates in Internet2. Developed and implemented a high-speed state network in conjunction with other state institutions (FloridaNet, http://www.internet2.ufl.edu/) that extends Internet2 services throughout Florida.
- Implemented distributed learning initiative that has been recognized as a best practice by EDUCAUSE and other groups. Hundreds of web-based courses have been produced, enrolling more than 6,500 students each term. http://reach.ucf.edu/~coursdev/
- Instituted program to upgrade existing classrooms for advanced multimedia instruction. To date, more than 30 rooms have been retrofitted, and all new instructional spaces are provided with multimedia facilities. http://www.oir.ucf.edu
- Provides resources to assist faculty in using technology in instruction and research.
- Offers UCF courses through the SREB's Electronic Campus. http://www.srec.sreb.org/ Also distributed courses are included in the on-line directory maintained by the Florida Public Postsecondary Distance Learning Institute. http://www.flcampus.org

University of Florida

- Gives priority to adding/upgrading computer equipment for faculty and staff, developing distance learning courses, integrating new technology in the classroom and improving network infrastructure.
- Expanded campus core to provide OC3 and OC12 ATM systems and to provide 100 Megabytes to buildings.
- Is renovating classrooms through the Classroom Upgrade Project to provide multimedia access, including data and video ports, video projection, computers, overhead cameras and laser disk players.
- Instituted a Faculty Support Center for computing that offers software training to faculty and staff and tailors courses to meet departments' specific technology needs.
- Trained Student Technology Assistants to work one-on-one with faculty on Web-related projects.

University of South Florida

- Gives priority to installing state-of-the-art business applications (student, human resource and financial), adding productivity and communication software tools, developing faculty instructional alternatives and building network capabilities.
- Received NSF grant for high-speed connectivity.
- Internet2 member.

- Provides training and support for faculty who wish to employ technology in the redesign of the learning model through campus Virtual Instructional Team for the Advancement of Learning (VITAL) program.
- Instituted Virtual Libraries program to support the adoption of electronic formats for USF-authored theses and dissertations.
- Developed a plan to support all USF students with a computer account beginning with acceptance or registration. The program will support official and informal communication with students in paperless fashion, support class listserves and chat groups and simplify computing access.
- Instituted Classroom Connectivity project to provide increased network bandwidth to computer labs and classrooms and 100 Megabytes to the desktop through much of the Tampa campus, with plans to extend the project to regional campuses.
- Participates in State University System and SREB virtual university projects.

Georgia

Georgia State University

- Gives priority to improving information accessibility via network enhancements/expansion (GSU Net2 Network Upgrade and GSU Village Computer Connectivity projects), adding/upgrading computer equipment for students, faculty and staff, integrating new technology in the classroom, and conducting Y2K compliance.
- Receives earmarked state funds for the Galileo Interconnected Library Project.
- Received NSF funding for a high performance network connection to the Georgia Center for Advanced Telecommunications Technology (GCATT) Broadband Internet Project.
- Is improving computer connectivity in student housing.
- Is reengineering business procedures to coincide with implementation of PeopleSoft financial and business operations software.
- Partners with other higher education institutions through the Georgia Learning Alliance.

Guam

University of Guam

- Gives priority to adding/upgrading computer equipment for faculty and staff, adding telecommunications ports and remote access capabilities, and upgrading computer equipment for administrative support.
- Assesses fees of $35 per student to finance student computer labs and Internet access.
- Participates in Western Governors University.

Hawaii

University of Hawaii

- Receives state funding earmarked for network upgrades and information systems.
- Receives NSF funds to finance networking initiatives.
- Is implementing new statewide integrated digital network.
- Participates in Western Governors University.

Illinois

University of Illinois at Chicago

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, adding telecommunications ports and remote access capabilities and conducting Y2K compliance.
- Receives state funds earmarked for technology to support undergraduate learning, laboratories, networks, and computers in student libraries.
- Is expanding and upgrading network to ATM, OC3 to support high performance computing for faculty.
- Partners with other campuses of the University of Illinois to form UI-Online, a virtual university project focusing on graduate level programs, continuing education, and certificate programs.

University of Illinois at Springfield

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and providing networking/connectivity.
- Installed ATM Network Backbone.
- Created an Office of Technology Enhanced Learning.

University of Illinois at Urbana-Champaign

- Gives priority to adding telecommunications ports and remote access capabilities, developing distance learning courses and integrating new technology in the classroom.
- Hosts the National Center for Supercomputing Applications, one of four U.S. NSF supercomputing centers providing high-performance computing and communications resources for more than 6,000 users at more than 380 universities and corporations.

Indiana

Indiana University (Multi-Campus Response)

- Assesses fees of $42 to $100 per student per semester. Fees vary by campus.
- Receives state funds earmarked for faculty and staff computer upgrades, integrating new technology in the classroom, adding telecommunications ports and remote access capabilities, and enhancing digital libraries.
- Receives NSF funding for High Performance Networking and High Performance Computing.
- Participates in the Abilene network.
- Participates in the Western Governors University.
- Co-leads the NSF-funded TransPAC project to build a network connection between vBNS and the Asia Pacific Advanced Network. http://www.indiana.edu/~uits/cpo/transpac/
- Instituted an "electronic forms" Financial Information System with automatic routing and increased data access. http://www.fms.indiana.edu/fis/fis_info.html
- Recently completed a comprehensive strategic plan for Information Technology: Architecture for the 21st Century. http://www.indiana.edu/~ovpit/strategic/

Purdue University

- Gives priority to adding/upgrading computer equipment for students, faculty and staff and integrating new technology in the classroom.
- Assesses fee of $64 per student to finance student labs and infrastructure.
- Received private donations for the purchase of computers, hardware, and software and to outfit labs.

Iowa

University of Iowa

- Gives priority to adding telecommunications ports and remote access capabilities, conducting Y2K compliance, and integrating new technology in the classroom.
- Assesses fee of $102 per student per year.
- Receives federal funds for high performance connections and research.
- Internet2 member.
- Receives earmarked state funds for faculty development and classroom technology.

Kansas

Wichita State University

- Gives priority to conducting Y2K compliance measures, building network infrastructure and adding/upgrading computer equipment for students.
- Assesses a fee of $1 per student credit hour to finance technology to support instruction. Engineering majors pay $15 per credit hour to finance technology in the Engineering College.
- Receives state matching funds of $2 for each $1 collected in student fees.
- Received one-time state funds to finance the network and library systems as well as classroom technology.

- Instituted a Campus One-Card program to improve services to students.

Kentucky

Kentucky State University

- Gives priority to conducting Y2K compliance measures, adding/upgrading computer equipment for students and developing distance learning courses.
- Assesses student fee of $60 to finance student computer equipment.
- Is participating in the development of a virtual university that will include all Kentucky state universities.

Northern Kentucky University

- Gives priority to IT restructuring and creating a unified IT plan, adding/upgrading computer equipment for students, conducting Y2K compliance measures, integrating student, finance and human resources systems, and integrating new technology in the classroom.
- Assesses student fees to finance technology initiatives that directly affect students, including labs and other student services.
- Receives state funds earmarked for development of the Commonwealth Virtual University and Library.
- Completed installation of a fiber-based campus network, and upgraded the mainframe systems software.
- Instituted a faculty-led development program that has trained more than 100 faculty in the last year on standard templates for use of technology in instruction.
- Has set aside funds for "Programs of Excellence" that will finance specific technology upgrades for departments.
- Partners with Cincinnati Bell to offer discounted ISP rates to faculty, staff and students.

Louisiana

University of New Orleans

- Gives priority to adding/upgrading computer equipment for students, conducting Y2K compliance and upgrading administrative systems, and integrating new technology in the classroom.
- Assesses fee up to a maximum of $75 per student per semester to finance technological enhancement of student learning.
- Established and implemented faculty initiatives for Teaching with Technology through private donations.
- Is undertaking PeopleSoft software upgrade of administrative systems.

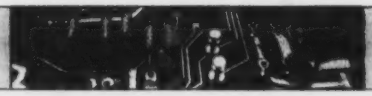
Southern University and A&M College System (System Response)

- Gives priority to adding/upgrading computer equipment for students, conducting Y2K compliance, and integrating new technology in the classroom.
- Assesses fee of $160 per student to provide technology access for students.
- Receives funds under Title III of Higher Education Act to finance educational program needs.
- Installed and implemented ATM-supported fiber optics networks on all three campuses of the SUS.
- Campuses are collaborating on distance learning projects.

Maryland

Towson University

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and conducting Y2K compliance.
- Assesses fee of $135 per student to finance a student lab, network infrastructure, "smart" classrooms, and improvements in various administrative applications.
- Received state funds earmarked for library upgrades, distance learning and Web-based course development.
- Receives NSF funding for student lab equipment.



- Installed high-speed Internet service in the residence halls through funds from private partners.
- Created Computing and Network Services Help Center to provide computer and telecommunication support for faculty, staff and students.
- Created Center for Instructional Advancement and Technology, to assist faculty in applying technology to instructional delivery and teaching and learning strategies.
- Created the Center for Student Computer Assessment and Development to assist students in assessing and improving technology skills.
- Participates in planning for the University System of Maryland Virtual University.
- Plans to contract with an outside vendor for the creation and management of on-line university courses.
- Is studying the feasibility of requiring students to provide or purchase their own computers.

United States Naval Academy

- Gives priority to adding/upgrading computer facilities for faculty and staff, adding/upgrading computer equipment for students, integrating new technology in the classroom, and integrating data networking and client server systems.
- Is migrating to a fiber-based star configured ATM enterprise network.
- Provides Website and T-3 high-speed Internet access to all users 24 hours daily
- Provides decision-ware to all users for managing their daily work routines.

University of Maryland, College Park

- Gives priority to adding telecommunications ports and remote access, developing distance learning courses, and integrating new technology in the classroom.
- Receives state funding earmarked for the above three purposes, and for adding IT infrastructure.
- Receives federal funds for research support (e.g. digital libraries, high performance computing, human interactions).
- Conducts a Campus Computing Associates Program with discipline-oriented consultants who promote academic use of information technologies in the colleges.
- Equipped Teaching Theaters, learning environments designed for active participation by students, including tools for anonymous input during discussions.
- Conducts a faculty training and mentoring initiative, The Institute for Instructional Technology, designed to help faculty incorporate technology in the learning process, and is planning a Teaching with Technology Symposium for spring semester. http://www.inform.umd.edu/EdRes/FacRes/TeachTech/.TeachTech/
- Faculty use WebCT course management software to support web-based courses and interactions.
- Offers student peer training program in teaching and technology.
- Offers students a week-long Web Designer and Development program. http://www.aits.umd.edu/WebDeveloper/
- Created Web page to offer one-stop-shopping administrative services to students, including admissions, financial aid, registration and advising. http://www.testudo.umd.edu
- Is collaborating with other University System of Maryland institutions on distance education initiatives and in planning a formal virtual university environment.
- Is pursuing participation in the UCAID project and in the development of a regional high-speed network.

University of Maryland Eastern Shore

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and integrating new technology in the classroom.
- Receives funds from Title III of the Higher Education Act for infrastructure upgrades.
- Is participating in planning the University System of Maryland Virtual University.
- Broadcasts a live, after-school, homework assistance program via Comcast Cable to provide call-in assistance in English and Math to

4th through 8th graders in the surrounding area. Uses state-of-the-art digital cameras and editing equipment and connects to Comcast via fiber optic link.

Is upgrading networking backbone to incorporate Gigabit Ethernet service to residence halls and ATM service to labs and faculty/staff offices.

Michigan

Oakland University

Gives priority to adding/upgrading computer equipment for students, faculty and staff, and installing new administrative system.

Assesses student fee of $4 per credit in selected courses to finance information technology.

Runs Oak Archive, a software archive with a Virtual Software Library.

Participates in the Michigan Virtual University.

Minnesota

University of Minnesota

Gives priority to conducting Y2K compliance, integrating new technology in the classroom, and adding/upgrading computer equipment for faculty and staff.

Assesses fees varying from $25 to $100 per student per quarter, which go directly to the college in which the student is enrolled for updating labs, classroom equipment and department equipment, and for curriculum development.

Receives earmarked state funds for the Minnesota Virtual University, Distance Education and GigaPoP/Internet2 projects.

Collaborates with other Minnesota colleges and universities, state agencies, industry and K–12 representatives in developing the Minnesota Virtual University, which will be a one-stop, on-line service for registration, financial information and academic information, but will not be a degree-granting institution. http://www.mnvu.extension.umn.edu/

Is partnering with IBM to extend on-line student services capabilities, including course registration, advising, admissions, financial aid and the university bookstore. http://www1.umn.edu/tc/studentspace/

Recently completed a University of Minnesota and Minnesota State Colleges and Universities Joint Report on Information Technology Expenditures, detailing all information technology initiatives, as required by the Minnesota State legislature. http://www1.umn.edu/oit/projects/joint-report.html

Mississippi

Alcorn State University

Gives priority to adding/upgrading computer equipment for students, faculty and staff, and developing distance learning courses.

Assesses fees of $80 per student to finance information technology.

Receives state funds earmarked for Y2K compliance and technology equipment support.

Receives funds under Title III of the Higher Education Act for purchasing staff computers.

Is updating cabling infrastructure to single mode and multi-mode fiber optics cabling and copper cabling. Once completed, voice, data and video signals will be available to all major buildings on campus.

Is upgrading administrative system to a system that will run in a graphical user interface environment.

Equipped a lab in the campus student union with Internet access to allow convenient student access.

Installed state-of-the-art technology in the chemistry and physics, biological sciences and mathematical sciences departments.

Equipped a video conference center to conduct live interactive video conferences and distance learning classes in conjunction with other Mississippi universities. Interactive connections to K–12 networks and networks in

other states and countries are also possible.

Mississippi State University

- Gives priority to building network infrastructure, upgrading administrative information systems, and adding/upgrading computer equipment for faculty and staff.
- Assesses fee of $40 per student per year to finance information technology.
- Participates in Internet2.
- Offers distance learning opportunities.

University of Mississippi

- Gives priority to adding/upgrading computer equipment for faculty and staff and adding telecommunications ports and remote access capabilities.
- Assesses fee of $27.50 per student for telephone registration and networking improvements.
- Is conducting Web development for student applications.

University of Southern Mississippi

- Gives priority to adding/upgrading computer equipment for students, conducting Y2K compliance, and improving network infrastructure.
- Assesses fee of $30 per student per semester to finance student computer labs, networking of residence halls, and distance learning opportunities.
- Receives state funds earmarked for adding/upgrading computer equipment for faculty and staff, Y2K compliance, and installation of PeopleSoft Administrative Software to handle human resources, payroll, financial affairs, financial aid and alumni operations.
- Is networking the campus.
- Delivers classes in several locations throughout the state via the compressed/interactive video network and has applied for a grant to become a local organization site for educational broadcasts via microwave.

Missouri

University of Missouri-Kansas City

- Gives priority to digitizing libraries, and adding/upgrading computer equipment for faculty, staff and students.
- Assesses fee of $8 per student credit hour to finance student computer equipment.
- Upgraded state Coordinating Board of Higher Education/Missouri Research and Education Network (MOREnet) Internet access.
- Provides an on-line data warehouse.
- Partners with industry and other higher education institutions to provide on-line nursing and engineering courses.

University of Missouri-St. Louis

- Gives priority to Y2K compliance, developing distance learning courses, and integrating new technology in the classroom.
- Assesses fee of $8 per student credit hour to finance student computing, advanced technology classrooms, and technology infrastructure
- Provides an interactive Course WEB Wizard (www.umsl.edu/cww) to assist faculty in providing course information over the Web.
- Is developing an on-line bulletin service.
- Collaborates with area community colleges on courses through interactive video and the Web.
- Offers an on-line MBA. http://mba.umsl.edu

Nebraska

University of Nebraska (System Response)

- Gives priority to developing distance learning courses, campus infrastructure and application upgrades, and adding/upgrading computer equipment for students.
- Assesses fee of $5 per student credit hour to finance information technology and student services.

- Receives funds earmarked for faculty development, labs, distance education, and technology course work.
- Receives NSF, NASA and EPSCoR funding for labs and high-speed networking.
- Partnering with private entities and receiving private donations to finance a Technology College and computer labs.
- Is installing administrative system for finance and human resources.
- Undertook Data Warehouse initiative
- Participates in the Western Governors University.
- Is partnering with IBM on a joint study aimed at developing a digital library.
- Provides high school class curriculum on line.

Nevada

University of Nevada, Las Vegas

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and developing Web-based applications to enhance access to information.
- Assesses fee of $2 per student credit hour to support college, department, and university computer labs and computer-based teaching applications
- Receives state funds earmarked for workstation replacement, data warehousing and technical support positions.
- Receives EPSCoR funding for high-speed connectivity.
- Internet2 member.
- Has constructed five new computer-based teaching facilities.
- Participates in the Western Governors University.
- Integrated Academic Computing and Administrative Computing into a new unit entitled Office of Information Technology.

New Jersey

Montclair State University

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and adding telecommunications ports and remote access capabilities.
- Assesses student fees to finance student labs and remote Internet access.
- Receives state funds earmarked for connectivity initiatives.
- Provides free student, faculty and staff remote access to the Internet.

New Mexico

New Mexico State University

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and integrating new technology in the classroom.
- Assesses fee of $24 per student to finance instructional equipment.
- Receives federal funds for instructional research equipment.
- Participates in the Western Governors University.

New York

The City University of New York (System response)

- Gives priority to digitizing libraries, adding/upgrading computer equipment for faculty and staff, and developing distance learning courses.
- Assesses fee of $25 per student to finance student computer equipment.
- Receives state funds earmarked for network infrastructure, digital libraries and distance learning.
- Is building a video layer onto existing voice and data WAN to allow for distance learning initiatives.

The Graduate School and University Center of the City University of New York

Gives priority to adding/upgrading computer equipment for students, faculty and staff, digitizing libraries and Y2K compliance.

Assesses fee of $12 per student to finance information technology.

Receives state funds earmarked for distance learning and media studies.

Is converting to Windows NT campus-wide.

Is converting to new student services/finance software system.

State University of New York (System Response)

Gives priority to digitizing libraries, developing distance learning courses and integrating new technology in the classroom.

Receives state funds earmarked for library automation, a university-wide network and university-wide computer center.

Is conducting the SUNY Learning Network (virtual university).

Is planning SUNYConnect (a virtual library connecting 64 New York campuses).

Planning expansion of existing network (SUNYNet) connecting all SUNY campuses.

University at Albany, SUNY

Gives priority to adding/upgrading computer equipment for faculty, staff and students, and integrating new technology in the classroom.

Assesses student fees to finance information technology.

Instituted a Center for Excellence in Teaching & Learning to assist faculty in using information technology in teaching and to provide professional development related to information technology. http://www.albany.edu/cetl/

Upgraded networking infrastructure to provide Ethernet service to residence halls. Also providing networking technical support to students. http://www.resnet.albany.edu/

Subsidizes a computer store to make PCs and services available to students at low cost.

Is participating in the planning of SUNYConnect, a virtual library connecting 64 New York campuses.

University at Buffalo, SUNY

Gives priority to adding/upgrading computer equipment for students, Y2K compliance, and integrating new technology in the classroom.

Assesses fee of $400 per student per academic year for student information technology support, including public workstations, specialized workstations in academic departments, smart classrooms, student services, and modem pool for off-campus access.

Receives state funds earmarked for developing basic infrastructure, including electronics and equipment purchases.

Receives NSF funding for a Center for Computational Research.

Is partnering with XEROX and exploring other partnership opportunities.

Received donations of equipment from IBM, SUN, SGI, Rich Products and others.

Will require entering freshmen, beginning in Fall 1999, to have access to a computer; students can determine how they assure access.

Increased modem pool for off-campus access to 1,000 users, and ports were installed in libraries for laptop connections.

Fully wired all residence hall rooms.

Works with SUNY system to leverage partnership donations to acquire and implement high performance computing.

Plans replacement of its administrative computer system as part of a SUNY-wide replacement effort.

Collaborates with numerous entities to provide distance education and training, serving UB students, Buffalo schools, regional populations, and students at other SUNY institutions.

North Carolina

East Carolina University

- Gives priority to Y2K compliance, developing distance learning courses, and adding/upgrading computer equipment for students.
- Assesses fees of $60 per student to finance computer labs, networking and other student technology.
- Receives one percent of its state appropriation as earmark for campus-wide infrastructure.
- Provides a campus-wide network and e-mail system.
- Provides on-line student-registration system.
- Collaborates with business/industry and other higher education institutions to offer virtual university services.

University of North Carolina at Greensboro

- Gives priority to building a campus-wide network, integrating new technology in the classroom, and developing distance learning courses.
- Assesses student fees of $125 to operate, furnish and upgrade student computer labs.
- Implemented an integrated student information system with on-line registration for courses.
- Provides a Superlab for open use by students, with student consultants.
- Partners with other higher education institutions to provide virtual university services.

North Dakota

University of North Dakota

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and integrating new technology in the classroom.
- Assesses fee of $50 per full-time student per semester to finance campus data networking, departmental and general-purpose computer labs, and equipment for classroom presentations.
- Receives state funds earmarked for system-wide and campus computing.
- Weather researchers use campus high-speed networking to improve the quality of weather research and benefit the local agricultural economy, other weather-impacted industries, and the state.
- Participates in the Western Governors University.
- Is considering, as part of the North Dakota University System (NDUS), an initiative to create an NDUS Virtual University.
- Participates in Internet2.
- Participates in the Great Plains Consortium of Midwest Colleges and Universities.

Ohio

Cleveland State University

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and integrating new technology in the classroom.
- Assesses fee of $2.35 per student credit hour to finance information technology.
- Rewired campus for integrated state-of-the-art voice, data and video capability.

Ohio University

- Gives priority to Y2K compliance, adding/upgrading computer equipment for students, and integrating new technology in the classroom.
- Increased tuition by 1 percent to finance academic technology that directly benefits students, determined on a college-by-college basis.
- A Technology Initiative Grant from the Ohio Board of Regents enabled formation of the Center for Innovation in Technology for Learning, technology grants for faculty, and enhancements of the campus networking infrastructure.
- Is installing residence hall networking and renovating space for residence hall computing laboratories.

- Offers a virtual "MBA Without Boundaries" program. http://mbawb.cob.ohiou.edu/
- Recently conducted a technology assessment as part of strategic planning efforts.

University of Cincinnati

- Gives priority to adding telecommunications ports and remote access capabilities, conducting Y2K compliance, and integrating new technology in the classroom.
- Assesses fee of $165 per student per academic year to finance the student dial-in modem pool, help desk, lab support and computer equipment.
- Receives state funds earmarked for building upgrades and expanded dial-in capacity.
- Receives NSF funds for high-speed connections.
- Financed development of a new Student Information System (UniverSIS) through state capital appropriations.
- Contracted for campus ATM backbone services with local Bell Operating Company.
- Leads a committee to establish a statewide license agreement for desktop application software.
- Is working with a major software company to offer new multimedia, virtual university services.

University of Toledo

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and conducting Y2K compliance.
- Assesses fee of $100 per student per year to finance instructional technology.
- Receives state funds earmarked for technology initiatives.
- Installed new campus network.
- Collaborates with other higher education institutions to provide team teaching via distance learning equipment.

Wright State University

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and Y2K compliance.
- Directed 10 percent of tuition increase to finance computing technology.
- Participates in Ohio Link, a collaborative statewide on-line library of electronic journals.
- Is applying for membership in Internet2 project.

Oklahoma

Oklahoma State University

- Gives priority to integrating new technology in the classroom, Y2K compliance, and adding/upgrading computer equipment for faculty and staff.
- Assesses fee of $60 per student to finance labs, infrastructure and technology support.
- Receives state funds earmarked for distance education.
- Receives private donations to finance distance learning, classrooms, network and computing equipment.
- Participates in Internet2 and in the Abilene project.
- Participates in the Western Governors University and the Oklahoma Electronic Campus (OneNet) initiative. http://www.ok-electroniccampus.org
- Processes grant proposals electronically.

University of Oklahoma

- Gives priority to adding/upgrading computer equipment for students, conducting Y2K compliance, and integrating new technology in the classroom.
- Assesses fee of approximately $120 per student per semester. $5 per credit hour is allocated for central computing resources and the rest finances specific computing resources based on the student's course load.
- Receives state funds earmarked for faculty instructional development, faculty research initiatives, and database access.
- Cooperates with OneNet, Oklahoma's official telecommunications and information network, to provide state-of-the art, statewide network connections to public schools, vocational-technical schools, colleges and universities, courts, libraries, hospitals and

government agencies in the state, nationally and internationally.

- Participates in the University Corporation for Advanced Internet Development (UCAID).
- Participates in Internet2 and the Abilene project.
- Offers several virtual courses at the graduate level through a variety of electronic means, including the SREB and the Oklahoma Electronic Campus (OneNet) initiative. http://www.ok-electroniccampus.org

Oregon

Oregon University System (System Response)

- Assesses fee of $156 per student per year to finance student computing and telecommunication.
- Receives state funds earmarked for the statewide network.
- Receives federal funds for high-speed connections, the Western Undergraduate Exchange, and for distance education initiatives.

University of Oregon

- Gives priority to integrating new technology in the classroom, developing network-based curriculum, and participation in advanced network technologies and applications.
- Assesses fee of $65 per student per term to staff the computing center and for management/maintenance of campus labs and for deans to use in technology programs in their schools/colleges.
- Receives NSF funds for high-speed connections and for the Network Startup Resource Center (NSRC), a group that assists developing countries in establishing networks. www.nsrc.org
- Internet2 member.
- Received an equipment grant from Intel, Inc., to upgrade campus computing equipment and resources.
- Participates in Oregon Wide-Area Network, a state-financed, statewide network.
- Offers distance education course work over the Internet.

Pennsylvania

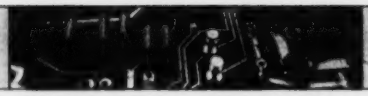
The Pennsylvania State University

- Gives priority to adding/upgrading computer equipment for students, adding telecommunications ports and remote access capabilities, and Y2K compliance.
- Assesses fee of $90 per student per semester to finance student computing needs.
- Participates in Internet2.
- Founded the Penn State World Campus, which offers distance education programs and support services such as library access, registration and records, advising, and career services through the World Wide Web, computer conferencing, video and other media.

South Carolina

Clemson University

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and integrating new technology in the classroom.
- Assesses fee of $50 per full-time student per semester to finance student computer labs, instructional enhancement, improvement of the library system and network/Internet connections to all residence halls (ResNet 2000).
- Is replacing and upgrading administrative finance and human resource systems.
- Provides "virtual laptop" capabilities that allow users to log in from any campus computer lab and access a personalized array of services, such as personalized desktop settings, electronic mail, preferred software, and Internet connections, as well as data and documents the user has stored at any other location on campus.
- Is installing and using a campus-wide Collaborative Learning Environment to facilitate the use of information technology in teaching and research. It includes such options as time-stamped electronic submission of papers and projects and access to library reserve materials.



- Is constructing an OC-12 ATM backbone to support Internet2 networking requirements
- Receives NSF funding through collaboration with the South Carolina Research Authority, the University of South Carolina, and the Medical School of South Carolina, to support an OC-3 connection to the vBNS.

University of South Carolina

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, networking, and integrating new technology in the classroom.
- Assesses fee of $50 per student per semester to finance student support services.
- Receives NSF funding through a collaboration with the South Carolina Research Authority, Clemson University, and the Medical School of South Carolina, to support an OC-3 connection to the vBNS.

South Dakota

South Dakota State University

- Gives priority to integrating new technology in the classroom, adding/upgrading computer equipment for faculty and staff, and developing distance learning courses.
- Outfitted 56 classrooms with state-of-the-art technologies through the campus "Smart Classroom" initiative.
- Conducts an active faculty development program with support staff to train faculty in how to integrate technology into their curricula.
- Participates in the South Dakota Virtual University, with six campuses contributing and marketing on-line courses.

Tennessee

Middle Tennessee State University

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and integrating new technology in the classroom.
- Assesses student fees to finance student computing needs.
- Equipped 71 "Master Classrooms" with advanced technological capabilities.
- Is conducting various instructional technology initiatives.

Tennessee State University

- Gives priority to developing distance learning courses, adding/upgrading computer equipment for students, and network upgrades.
- Assesses fee of $100 per student to finance computer/technical lab supplies, equipment software and maintenance, as well as network costs, equipping of "smart classrooms," and staffing costs.
- Receives federal funds from a variety of agencies to finance improved computer facilities, a UV-Visible Spectrophotometer, equipment for genetic algorithm development, and funds for the Center for Automated Space Science and modernization of the Engineering Research Institute.
- Upgraded from Ethernet Network to an ATM Network.
- Upgraded more than 3,000 personal computers.
- Is networking entire campus, including every residence hall room.
- Collaborates with SREB and is sharing courses with other institutions through WEB and ITV.
- Additional information available at: http://www.tnstate.edu/vpbf/tvc/tvc.htm and http://tech.tnstate.edu

Texas

University of Houston

- Gives priority to adding/upgrading computer equipment for students, conducting Y2K compliance, developing distance learning courses, and integrating new technology in the classroom.
- Assesses fee of $5 per student credit hour to finance student

labs, equipment, and support personnel.

- Receives state funds earmarked for network enhancement, faculty workstations, and electronic classrooms.
- Participates in Internet2 as a charter member.
- Is involved in building Texas GigaPoP.
- Established a Supercomputer Center.
- Was the first Texas institution to connect to vBNS.
- Provides leadership in building a statewide, high-speed network.
- Networked residence halls to provide residents with access to data network.
- Provides on-line course software to faculty.
- Collaborates with business/industry, government, communities, and other higher education institutions to provide an on-line MBA and Instructional Technology Certification.

University of Texas at Arlington

- Gives priority to conducting Y2K compliance, integrating new technology in the classroom, and adding/upgrading computer equipment for students.
- Assesses fee of $6 per student hour to finance student computing facilities across campus, including one 24-hour facility for all students and other computing facilities within individual colleges and schools.
- Is upgrading administrative computing, library computing, and academic/research computing equipment and/or service.

University of Texas at Austin

- Gives priority to digitizing libraries, integrating new technology in the classroom, and adding computer equipment.
- Assesses fee of $6 per student credit hour per semester to finance information technology. Certain colleges also assess an instructional technology fee for their students.
- Is moving all administrative applications to the Web and will conduct business directly with its students, staff, faculty and other customers.
- Is enhancing data warehousing and reporting capabilities.
- Partners with government/communities and other higher education institutions to provide distance education courses through the UT-TeleCampus project. www.utsystem.edu

The University of Texas at San Antonio

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and conducting Y2K compliance.
- Assesses fee of $14 per student credit hour to finance computing needs.
- Provides automated Web-based student registration/information through a system called "ASAP."
- Offers multiple videoconferencing and remote-site distance-education classes in collaboration with the UT-Telecampus and other institutions.

Utah

University of Utah

- Gives priority to adding telecommunications ports and remote access capabilities, coping with Y2K compliance, and integrating new technology in the classrooms.
- Assesses fee of $88.10 per student to finance student computing labs.
- Receives state funds earmarked for information-technology-related curricula and infrastructure and federal funds for vBNS networking.
- Provides state-of-the-art computing, networking and visualization resources for multidisciplinary research activities, using computational modeling at the Intermountain Network & Scientific Computation Center. www.insce.utah.edu
- Hosts the Center for the Simulation of Accidental Fires & Explosions, which uses high-tech modeling to conduct research on fires and explosives. www.csafe.utah.edu

- Participates in the Western Governors University.

Virgin Islands

University of the Virgin Islands

- Gives priority to adding/upgrading computer equipment for students, faculty and staff, and developing distance learning courses.
- Assesses fee of $25 per student to finance telecommunications and information technology upgrades.
- Receives funds under Title III of the Higher Education Act to finance microwave communication and distance learning.
- Brought Internet connectivity to the Virgin Islands and for a long period was the only provider of local access.
- Uses video-conference technology to bring instruction to the two major islands in the territory.
- Is conducting a program to bring asynchronous distance learning to everyone in the Virgin Islands via the Internet.

Virginia

University of Virginia

- Gives priority to adding/upgrading computer equipment for students, research computing, and replacement of major administrative systems.
- Assesses fee of $45 per student to finance student-related computing resources.
- Receives state funds earmarked for desktop computing, Y2K compliance, and classroom technology.
- Receives NSF support for high performance connectivity through the vBNS system.
- Completed a five-year program to provide high-speed data network connections and fiber-optic cable to main areas and wire connections to all other buildings.
- Increased number of enhanced-technology classrooms to 13, with 17 more planned.
- Conducts numerous virtual university and distance education projects in cooperation with IBM, K–12 schools, other higher education institutions, and the national Learning Infrastructure Initiative.
- Participates in Internet2.
- Is integrating core administrative systems (finance, payroll, human resources, student systems, etc.) and replacing supporting technology.
- Is conducting a formal process to incorporate technology in teacher education.

Virginia Commonwealth University

- Gives priority to adding/upgrading computer equipment for students, conducting Y2K compliance, and upgrading/improving network access for faculty, staff and students.
- Assesses fee of $41 per full-time student to finance student technology needs.
- Receives state funds earmarked for leasing information technology equipment.
- Is developing a student-centered, asynchronous (on-demand) learning environment, so that students can access digitized versions of instructional materials archived on a digital library, using a "multimedia information mega server," at any time and from anyplace across a high-speed communications network.
- Uses a computer conferencing system, Execunet, so that faculty and students can communicate through "electronic classrooms," which allows on-line discussion groups and seminars. Execunet is also used for administrative communications, including "virtual meetings."
- Participates in the Virtual Library of Virginia, consisting of the libraries of 67 colleges and universities in the state. http:/www.gmu.edu/library/fen/viva/about.html

Virginia Polytechnic Institute & State University

- Gives priority to conducting Y2K compliance, developing distance learning infrastructure, and integrating new technology in the classroom.

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Assesses fee of $36 per student to finance a student computer help desk and hotline, student computer labs, technology support for academic programs, and to implement a mandatory computer requirement for all undergraduate students.

Allocates, under state directive, a portion of tuition revenue to support administrative information systems and Y2K compliance.

Outfitted more than 50 classrooms and seven distance-learning origination sites, and improved access to student computer labs as part of its Instructional Development Initiative.

Organized a Faculty Development Institute to assist faculty in integrating technology in teaching and learning and provide appropriate equipment, software, network connections and technical support. Ninety-six percent of faculty have attended FDI workshops and seminars.

Created "Cyberschool," a voluntary collaboration of faculty members, which has offered more than 500 courses completely or partially on-line, including on-line summer-school coursework.

Offers grants to faculty, through the Center for Innovation in Learning, to integrate technology into strategic, high-priority coursework and review results for student learning.

Offers introductory mathematics courses in a 24-hour, computer-based environment to more than 7,000 students through its "Mathematics Emporium" project.

Collaborated with other institutions to complete the pilot phase of The Electronic Campus of Virginia, offering more than 400 distance education courses over the statewide broadband network, Net.Work.Virginia. http://www.vacec.bev.net

Washington

Washington State University

Gives priority to conducting Y2K compliance, developing distance learning courses, and adding/upgrading computer equipment for students, faculty and staff.

Student Computing Services collects and uses optional student fees of $60 per student per semester for use of open access labs.

Receives state funds earmarked for equipment replacement and for WSUnet.

Receives NSF funding for a high performance connection to the vBNS.

Provides on-line student application/registration and degree/audit reporting for WSU applicants and students.

Increased the number of technology-based courses offered and equipped virtual classrooms with full multimedia services.

Participates in the Western Governors University and the Washington Open College concept distance education program.

West Virginia

Marshall University

Gives priority to digitizing libraries, adding/upgrading computer equipment for students and developing distance learning courses.

Assesses student fees of $35 per undergraduate, $50 for graduate and $100 per non-resident student to finance information technology.

Receives federal funding from NTIA, ARC, NSR and EPSCoR to finance infrastructure, economic development, integrated science education and digital libraries.

Has networked all campus buildings, including residence halls, through a collection of Ethernet networks tied by a fiber-optic backbone (MUNet) and plans to upgrade the campus backbone to a Switched ATM environment.

Provides all faculty with a networked personal computer.

Is completing administrative integration and Y2K compliance of human resources and financial systems.

Partners with Bell Atlantic and Cisco to provide distance education and network infrastructure.

Provides web-based library resources, online registration and electronic courses through its MUONLINE project.

Participates in the SREB.

West Virginia State College

- Gives priority to adding/upgrading computer equipment for students and integrating new technology in the classroom.
- Assesses student fees of $2 per student to fund information technology.
- Receives Department of Education funding dedicated to academic computing.
- Equipped two state-of-the-art electronic classrooms.
- Provides 19 computer labs and more than 200 computer stations for student use.

Wisconsin

University of Wisconsin (System Response)

- Gives priority to adding/upgrading computer terminals for faculty and staff, conducting Y2K compliance, and integrating new technology in the classroom.
- Uses 2 percent to 2.5 percent of tuition to finance student technology needs.
- Receives state funds earmarked for general computer access, lab/classroom modernization, IT/distance education infrastructure, BadgerNet (a statewide data, voice and video network), curricula redesign, and K–16 initiatives.
- Is developing learning technology centers at each campus.
- Is conducting library automation.
- Collaborates with Center for Learning Innovation, a separate entity within UW Extension that offers services to all UW institutions, such as training and support for use of educational technology, market assessment of UW-developed learning technology, technological courseware production and development, and marketing and distribution services.

University of Wisconsin-Madison

- Gives priority to adding telecommunications ports and remote access capabilities, integrating new technology in the classroom, adding/upgrading computer equipment for students, and reworking of administrative systems.
- Assesses fee of $42 per resident student and $190 per non-resident student to finance support for student information technology, including student labs, e-mail, dial-in access, and a Help Desk.
- Receives state funds earmarked for student computer labs, distance education, and network infrastructure.
- Receives NSF funding for high-speed connectivity.
- Internet2 member.
- Has been involved in the creation and development of WiscNet, the state education data network.

Glossary

Abilene A project of the University Corporation for Advanced Internet Development (UCAID) together with several major telecommunications corporations. It is being organized by UCAID in support of all its members, including participants in the Internet2 project. The Abilene Project will develop an advanced backbone network to connect regional network aggregation points, called gigaPoPs, being developed by UCAID members. It is intended to complement existing research networks already being used by UCAID member researchers and educators.

Asynchronous Transfer Mode (ATM) A data-transmission system using 53-byte packets designed to enable various kinds of data, including live audio and video, to be transmitted over a single channel.

Backbone Network A high-capacity electronic trunk connecting lower-capacity networks.

Bandwidth The amount of data that can be transmitted in a fixed amount of time. For networks, bandwidth is usually expressed in bits per second (bps).

Bit The basic unit of information in a digital system, either "on" ("1") or "off" ("0"). Also used to mean binary digit.

Broadband Refers to a network that carries information riding on carrier waves rather than directly as pulses, providing greater capacity at the cost of higher complexity.

Cyberspace Term used to describe the whole range of information resources available through computer networks.

DOD Department of Defense

Experimental Program to Stimulate Competitive Research (EPSCoR) Eighteen states and the Commonwealth of Puerto Rico participate in this Congressionally mandated federal program. Eligibility is limited to jurisdictions that historically have received limited amounts of federal research-and-development funds and have demonstrated a commitment to develop their research bases and improve the quality of science, mathematics and engineering research at their colleges and universities. Several federal agencies have developed partnerships with these states to improve the states' research infrastructure and competitiveness in research and development.

Gigabit One billion bits.

GigaPoP Stands for gigabit-capacity network point-of-presence. A gigaPoP is a regional network aggregation point for a collection of universities, national laboratories, and other education institutions. The gigaPoP provides access to inter-gigaPoP networks and other research or commercial networks.

Internet2 universities are establishing gigaPoPs that provide regional connectivity among universities and other organizations. Through the gigaPoPs, universities will connect to the Next Generation Internet (see below) and other advanced federal networks, including the National Science Foundation's very high performance Backbone Network Service (vBNS); NASA's Research and Education Network (NREN); DOD's Defense Research and Education Network (DREN); and the Department of Energy's Energy Sciences network (ESnet). The Next Generation Internet and Internet2 are designed to ensure that advanced networking services are available on interoperable backbone, regional, and local networks that are competitively provided by multiple vendors.

High Performance Computing This term encompasses advanced computing, communications, and information technologies, including scientific workstations, supercomputer systems, high-speed networks, special-purpose and experimental systems, the new generation of large-scale parallel systems, and applications and systems software with all components integrated and linked over a high-speed network.

Internet A worldwide, public network of networks that connects a wide variety of computers, applications and users.

Internet2 A collaborative effort by more than 120 U.S. universities, working with partners in industry and government, to develop advanced Internet technologies and applications to support the research and education missions of higher education. Internet2 is a project of the University Corporation for Advanced Development (UCAID).

Internet Service Provider (ISP) An institution that provides access to the Internet in some form.

IP Internet Protocol

Local Area Network (LAN) A small data network connecting various electronic devices in a localized geographical area, such as a company or campus.

Megabit One million bits

NASA National Aeronautics and Space Administration

National Science Foundation (NSF) Federal agency that supports a broad range of scientific research. It has made more than 70 High Performance Connections awards to Internet2 universities, to allow them to connect to NSF's very high performance Backbone Network Service (vBNS) or other high-performance network providers (e.g. Abilene). vBNS connectivity is a key part of NSF's Next Generation Internet program.

National Telecommunications and Infrastructure Administration (NTIA) An agency of the U.S. Department of Commerce created to deal with issues in domestic and international telecommunications and information technology.

Network Computer-communications technologies that link multiple computers, allowing sharing of information and resources across geographically dispersed locations.

Next Generation Internet (NGI) A multi-agency federal research and development program developing advanced networking technologies and new applications that require such networking; capable of operating 100 to 1,000 times faster than today's Internet.

OC-3 Network transmission speed of 155 Megabytes.

OC-12 Network transmission speed of 622 Megabytes.

Southern Regional Electronic Campus Created by the Southern Regional Education Board, the Southern Regional Electronic Campus planned to offer more than 1,250 distance-education courses and 60 degree programs to about 15,000 students in academic year 1998–99. Described as an electronic marketplace, the SREC web site gives students basic information about available courses, including subjects, levels, requirements and costs. The students then link directly to the college or university offering the course or program.

Approximately 175 colleges and universities from the 16 SREB states will have courses available on the Electronic Campus this year. The states are Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Oklahoma, North Carolina, South Carolina, Tennessee, Texas, Virginia and West Virginia. http://www.srec.sreb.org/

T1 Network transmission of a formatted digital signal at a rate of 1.5 megabits per second.

T3 Network transmission of a formatted digital signal at a rate of 45 megabits per second.

University Corporation for Advanced Internet Development (UCAID) Formed to provide direction for development of advanced networking within the university community. Activities will include the Internet2 and Abilene projects, as well as other programs devoted to network research, technology transfer, and collaborative activities in related fields, such as distance learning and educational technology. It is supported by more than 175 member organizations, universities, corporations and non-profit organizations.

UNIX A multi-user operating system for minicomputers developed by AT&T and used particularly by engineering and technical professionals. Now also used as the basis of file-server operating systems for networks of personal computers.

Very high performance Backbone Network Services (vBNS) The vBNS is a nationwide network that supports high-performance, high-bandwidth research applications, and serves as one of the backbone networks for the Next Generation Internet and Internet2. Launched in 1995, the vBNS is the product of a five-year cooperative agreement between MCI and the National Science Foundation.

Virtual Reality An artificial environment created with computer hardware and software and presented to the user in such a way that it appears to be a real environment. In addition to feeding sensory input to the user, devices also monitor the user's actions. Goggles, for example, track how the eyes move and respond accordingly by sending new video input.

Western Governors University WGU is a degree-granting organization with members in 17 states and Guam that deliver courses over the Internet or via other advanced technologies. It offers competency-based degrees and certificate programs, and its members include community colleges, large public universities, private colleges and large corporations. It was founded by the governors of several Western states with the goal of "making higher education more accessible and with degrees and certificates based on what a person actually knows and can demonstrate."

WGU participating states are: Alaska, Arizona, Colorado, Hawaii, Idaho, Indiana, Montana, Nebraska, New Mexico, Nevada, North Dakota, Oklahoma, Oregon, Texas, Utah, Washington, Wyoming

Wide Area Network (WAN) Any computer network that extends for more than a short distance (for example, beyond a building or related group of buildings).

Several definitions have been extracted from glossaries produced by the following:
Internet2—www.internet2.edu
National Coordinating Office for Computing, Information and Communications—www.ccic.gov
Northeast Center for Telecommunications Technologies—www.nctt.org

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About NASULGC

The National Association of State Universities and Land-Grant Colleges (NASULGC) is a voluntary, non-profit association of public universities, the nation's land-grant institutions, and many state university systems. In 1999, there were 203 member institutions located in all 50 states, the District of Columbia, and the U.S. territories. Currently, NASULGC campuses enroll more than 3.2 million students and claim upwards of 20 million alumni. They award more than a half-million degrees annually, including about one-third of all the bachelor's and master's degrees, 60 percent of all U.S. doctoral degrees and 70 percent of the nation's engineering degrees. The association's overriding mission is to support high-quality public higher education and serve its member institutions as they perform their traditional teaching, research, and public service roles. NASULGC provides a national forum for the discussion and development of policies affecting higher education and the public interest.

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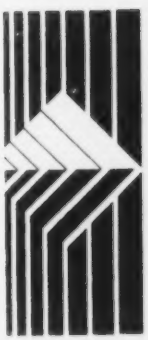

National Association of State Universities and
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